

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
3 May 2001 (03.05.2001)

PCT

(10) International Publication Number
WO 01/30705 A1

- (51) International Patent Classification⁷: **C02F 1/76**
- (21) International Application Number: **PCT/US00/16835**
- (22) International Filing Date: **19 June 2000 (19.06.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
60/140,248 **18 June 1999 (18.06.1999)** **US**
- (71) Applicant (for all designated States except US): **BAKER HUGHES INCORPORATED** [US/US]; 3900 Essex Lane, Suite 1200, Houston, TX 77027 (US).
- (72) Inventor; and
(75) Inventor/Applicant (for US only): **WILLIAMS, Edward, E.** [GB/GB]; 24 Birch Close, Killamarsh, Sheffield S21 1FW (GB).
- (74) Agents: **POLACEK, Michael et al.**; Baker Hughes Incorporated, Suite 1200, 3900 Essex Lane, Houston, TX 77027 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

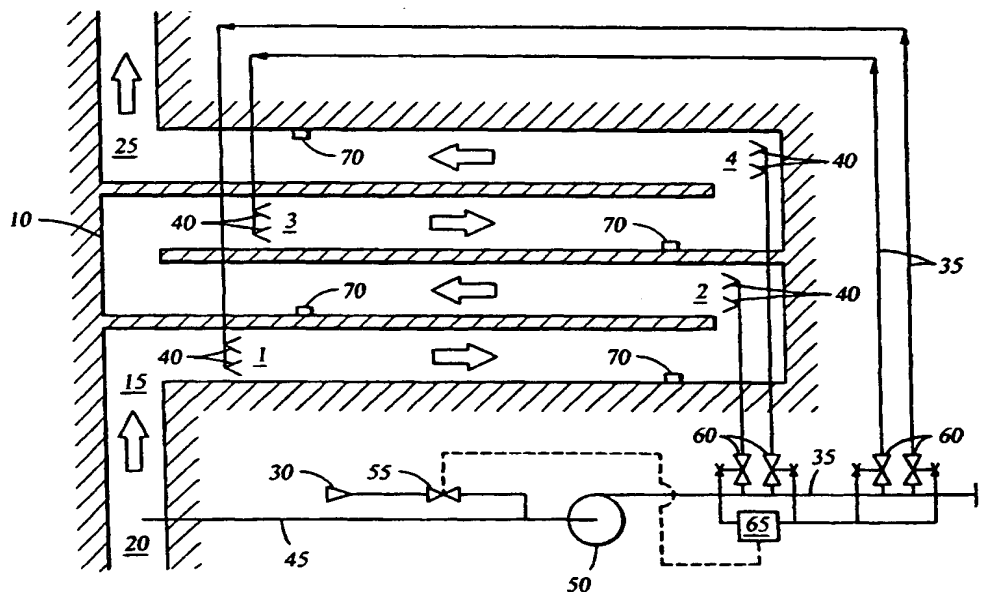
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **SEQUENTIAL DISINFECTANT TREATMENT FOR WASTE WATER**



(57) Abstract: A method and apparatus for sequentially dosing waste water with a disinfectant at a plurality of spaced locations along a flow path (15), such as within a contact tank (10). Dosages of disinfectant introduced at each location are proportioned or graded such that the dosage at each location is less than the dosages delivered upstream therefrom. The graded dosing provides a level of disinfectant effective to destroy or otherwise render harmless microorganisms in the waste water and minimize the residual disinfectant remaining at the end of the flow path while employing a lesser total amount of disinfectant in comparison to conventional, single-dosage techniques.

WO 01/30705 A1